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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Bernhard Sixt

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EXAMINER

KOAGEL, JONATHAN BRYAN

ART UNIT

PAPER NUMBER

3744

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,378	Applicant(s) SIXT ET AL.	
	Examiner JONATHAN KOAGEL	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05 July 2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In claim 30, "a heat of melting of at least 50 J/ml is not disclosed in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 32 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 32 recites the limitation "said chilling chamber" in line 2 of page 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 43 recites the limitation "a closure of said filling opening is removed on an outside as far as a machining surface, which terminates flush with a surface of a housing of said refrigerant chamber" (lines 2-4) which is unclear in context. It is not clear what exactly is being claimed - a machining surface of the cooling container, the removal of a closure, or some other limitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee US Patent No. 6,467,299 B1 and Ryu US Patent No. 6,068,882 and further in view of Drake US Patent No. 3,858,410.

Regarding claim 30, Coetzee teaches in figs. 1 and 2, a transport container for keeping frozen material chilled, comprising an insulating chamber (chamber that container 16 fits into), an insulation 12 that encloses said insulating chamber, an inner container 16 removably arranged in said insulating chamber said inner container 16 having at least one chamber for the material 13 and at least one refrigerant chamber (chamber between 16 and 18) which is permanently hermetically sealed (according to fig. 2, chamber between 16 and 18 is fully enclosed), and a refrigerant 14 located in said refrigerant chamber and giving off cold by solid/liquid phase transformation (Coetzee discloses using many types of refrigerants in solid, liquid and gel form, column 3 lines 13-56). Coetzee does not teach a superinsulation or a pure organic substance for the refrigerant.

Ryu teaches a superinsulation with a coefficient of thermal conductivity of 0.005 W/m K that is used in cryogenic (low temperature) applications (column 1 line 51-column 2 line 16).

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It would have been obvious to one of ordinary skill in the art at the time of invention to modify Coetzee with the teachings of Ryu to include a superinsulation in order to provide a cost effective and easy to handle insulation for cryogenic applications as well as an insulation having superior performance characteristics (Ryu column 1 lines 50-53 and column 2 lines 58-60).

Drake teaches a reusable heat sink means in a cooler undergoing a phase change such as mercury (column 2 lines 8-23, mercury is known in the art to be a pure organic substance and having a phase change at a temperature of -39 degrees Celsius which is in the range of -15 to -100 degrees Celsius). Regarding the heat of melting of at least 50 J/ml, it is inherently taught by Drake that at a temperature range of -15 to -100 degrees Celsius, mercury has a heat of melting of 50 J/ml.

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee and Ryu with the teachings of Drake to include a refrigerant with a phase change temperature of -39 degree Celsius in order to use the transport container with a variety of applications that require cooling of a material at temperatures below ambient temperature.

Regarding claim 32, the modified teaching of Coetzee discloses the invention as claimed above. Coetzee further teaches in fig. 2, wherein said refrigerant chamber 14 is configured like said chilling chamber 13 (examiner as best understood interprets the chilling chamber to mean the chamber that receives the material 13) in said inner container 16.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu and Drake as applied to claim 30 above and further in view of Guice US Patent No. 5,355,684.

Regarding claim 31, the modified teaching of Coetzee discloses the invention as claimed above. Coetzee as modified above does not teach a chilling jacket with a jacket chamber with a refrigerant, and an insulating jacket of a superinsulation.

However, Guice teaches in fig. 2, a chilling jacket 34 having a jacket chamber (chamber defined by 34) which contains a refrigerant 28 with a solid/liquid phase transition in a temperature range from 0 to -15 degrees Celsius, and an insulating jacket 38 which shields said chilling jacket 34 from outside, and contains insulation (column 6 lines 49-65 and column 9 line 58-column 10 lines 16). Guice discloses in column 8 a mixture of ethylene glycol and water which can be varied depending on how long the shipment needs to stay cold. Therefore, the mixture can be adjusted to perform a phase transformation at a range of 0 to -15 degrees Celsius.

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu and Drake with the teachings of Guice to include a chilling jacket with a jacket chamber and an insulating jacket surrounding it in order to protect the cryogenically insulated vessel from mechanical damage as well as providing extra thermal insulation in order to preserve the sample for the allotted amount of storage time (Guice column 10 line 66-column 11 line 2).

Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu and Drake as applied to claim 30 above and further in view of Cook et al. US Patent No. 5,934,099.

Regarding claims 33 and 35, the modified teaching of Coetzee discloses the invention as claimed above. Coetzee as modified above does not teach an additional refrigerant container with a refrigerant chamber.

However, Cook teaches in figs. 1 and 2, a refrigerant container 14 with a refrigerant chamber 62 for arrangement in said insulating chamber 28, said container also having a filling opening 44 which is permanently hermetically sealed after an introduction of a refrigerant (column 6 lines 15-64). Cook discloses that the opening is welded closed after the insertion of the heat sink.

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu and Drake with the teachings of Cook to include an additional refrigerant chamber in order to increase the rate of heat transfer from the sample container to the refrigerant containers in order to keep the temperature sensitive sample cooled for the allotted period of storage time.

Regarding claim 34, the modified teaching of Coetzee discloses the invention as claimed above. Coetzee further teaches in fig. 2, the inner container is composed of a low temperature resistant plastic high density polyethylene (column 3 lines 19-34). It is well known in the art that this material has a high resistance to low temperatures and is used in applications for housing and protecting vials of biomedical samples.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu, Drake and Cook as applied to claim 33 above and further in view of Guice.

Regarding claim 36, the modified teaching of Coetzee discloses the invention as claimed above. Coetzee as modified above does not teach a filling opening for the refrigerant is closed by a stopper.

However, Guice teaches in fig. 2, wherein said filling opening for the refrigerant 28 is closed by a stopper 32 (column 9 lines 58-66).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu, Drake and Cook with the teachings of Guice to include a stopper for the filling opening in order to be able to replace the type or the amount of refrigerant so that the transport container can be used for cooling a variety of samples that need to be cooled at a critical temperature.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu, Drake, Cook and Guice as applied to claim 36 above and further in view of Inoue JP Patent No. 403085261A.

Regarding claim 37, the modified teaching of Coetzee discloses the invention as claimed above. Coetzee as modified above does not teach a stopper with heat shrinkage and a press fit.

However, Inoue teaches in fig. 1, a stopper 14 configured as a stopper fitted by a press fit (Abstract). The general concept of using a stopper with different attachment methods is well known in the art. The stopper of Inoue is capable of being heat shrunk as well as press fit as it would insure that the liquid in the container would not leak out into the surrounding environment.

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu, Drake, Cook and Guice with the teachings of Inoue to include a press fit in order to ensure that the opening of the bottle or container is tightly sealed (Inoue Abstract).

Claims 38-39 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu, Drake and Cook as applied to claim 33 above and further in view of Connelly US Patent No. 52,269.

Regarding claim 38, the modified teaching of Coetzee discloses the invention as claimed above. Coetzee as modified above does not teach a filling opening closed by a screw stopper and welded closed.

However, Connelly teaches in fig. 2, a filling opening on a bottle is closed on an inside by a screw stopper (column 1 paragraph 2). Regarding the welding of the stopper after it is inserted into the filling opening, the general concept of welding and such permanent attachment methods are well known in the art. The welding of the

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stopper would prevent the stopper from accidentally becoming unscrewed and the possibility of the refrigerant contaminating the sample in the container.

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu, Drake and Cook with the teachings of Connelly to include a stopper and welding in order to seal the container in which liquids or other materials are kept in order to exclude the air within the container (Connelly paragraph 2).

Regarding claim 39, the modified teaching of Coetzee discloses the invention as claimed above. Coetzee as modified above does not teach a filling opening tapers conically and is closed by a conical stopper.

However, Connelly teaches in fig. 2, a filling opening of a bottle that tapers conically and is closed by a conical stopper (column 1 paragraph 2).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu, Drake and Cook with the teachings of Connelly to include a conical stopper in order to seal the container in which liquids or other materials are kept in order to exclude the air within the container (Connelly paragraph 2).

Regarding claim 42, the modified teaching of Coetzee discloses the invention as claimed above. Coetzee as modified above does not teach a stopper having a rotary attachment and ground into said filling opening.

However, Connelly teaches in fig. 2, a stopper having a rotary attachment (threads) and ground into said filling opening which is configured as a conical sealing opening by rotation (column 1 paragraphs 2-4). The general concept of tapping a hole by screwing a plug in with threads is known in the art. This allows a threaded member to enclose the hole without the capability of the stopper falling out due to the threads.

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu, Drake and Cook with the teachings of Connelly to include a stopper having a rotary attachment in order to seal the container in which liquids or other materials are kept in order to exclude the air within the container (Connelly paragraph 2).

Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coetzee, Ryu, Drake, Cook and Guice as applied to claim 36 above and further in view of George US Patent No. 5,895,561.

Regarding claim 40, the modified teaching of Coetzee discloses the invention as claimed above. Coetzee as modified above does not teach a stopper enclosed by a seal of amalgam forming metal.

However, George teaches a stopper enclosed by a seal of amalgam forming metal of copper (column 1 lines 38-49 and column 2 lines 38-52).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu, Drake, Cook and Guice with the teachings of George to include a seal of copper in order to fill a recess after a plug is inserted into a

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hole and thus forming a seamless seal with the body of the cooling container (column 2 lines 38-52).

Regarding claim 41, the modified teaching of Coetzee discloses the invention as claimed above. Coetzee as modified above does not teach a seal applied as an electrolytic coating to an element of a stopper.

However, George teaches a seal which is applied as an electrolytic coating to an element of said stopper (column 2 lines 38-52).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify Coetzee, Ryu, Drake, Cook and Guice with the teachings of George to include a seal applied as an electrolytic coating in order to fill a recess after a plug is inserted into a hole and thus forming a seamless seal with the body of the cooling container (George column 2 lines 38-52).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN KOAGEL whose telephone number is (571)270-7396. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules can be reached on (571)272-6681 or Cheryl Tyler (571)272-

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4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. K./
Examiner, Art Unit 3744
16 March 2009

/Cheryl J. Tyler/
Supervisory Patent Examiner, Art
Unit 3744